Title: A Layered Approach to Critical Friendship as a Means to Support Pedagogical Innovation in Pre-service Teacher Education

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in Pre-service Teacher Education

Abstract

In this paper we describe and interpret how two distinct layers of critical friendship were used to support a pedagogical innovation in pre-service teacher education. The innovation (called *Learning About Meaningful Physical Education,* or LAMPE) focuses on ways to teach future teachers to foster meaningful experiences for learners in physical education. Critical friendship was applied in two ways: (a) the first two authors served as critical friends to each other as they taught their respective teacher education courses using LAMPE, and (b) the third author acted as a "meta-critical friend", providing support for and critique of the first two authors' development and enactment of the innovation. Over two years, data were gathered from reflective journal entries, emails, recorded Skype calls, and teaching observations. The two layers of critical friendship held significant benefits in advancing and supporting the development of the innovation while also contributing to the professional learning of all participants. Analysis of the first year's data showed we entered the critical friendship without thoroughly considering what we each hoped to give and take from the relationship or acknowledging the potential problems that might unfold. In the second year of the research and based on suggestions from our meta-critical friend, we took a more rigorous inquiry stance as critical friends, contributing contentious feedback, and pushing each other outside of our personal and pedagogical comfort zones. This led to a noticeable improvement in our professional learning about teacher education practice and advanced the development of the LAMPE innovation.

Keywords: Pedagogy; physical education; interactivity; professional learning; self-study

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Pre-service Teacher Education

A prerequisite for conducting self-study of teacher education practice (S-STEP) is a clear and

explicit focus on the self-in-practice (Ovens & Fletcher, 2014; Pinnegar & Hamilton, 2009). Yet,

this focus on the self can be misleading, particularly to S-STEP newcomers, because it masks the

central role of others in the research process. Guidelines for quality in S-STEP, as expressed by

Bullough and Pinnegar (2001), Feldman (2003), Hamilton and Pinnegar (2013), LaBoskey

(2004), Pinnegar and Hamilton (2009), Samaras (2010), and Vanassche and Kelchtermans

(2015), include interactivity as one of several core features. LaBoskey (2004) suggested

"garnering multiple perspectives on our professional practice settings helps to challenge our

assumptions and biases, reveal our inconsistencies, expand our potential interpretations, and

triangulate our findings" (p. 849). Exactly who or what a S-STEP researcher interacts with,

however, is open to interpretation. For example, in addition to talking to students about her

practice, Hamilton (2005) described using Winslow Homer's art images as a catalyst to deeper

reflection about her self-in-practice.

While several options about sources of interactivity exist, many S-STEP researchers rely

on critical friends as their main source of interaction (Fletcher & Bullock, 2012; 2015; Loughran

& Brubaker, 2015; McDonough, 2014; Petrarca & Bullock, 2014; Russell & Bullock, 2014;

Schuck & Russell, 2005). Costa and Kallick (1993) defined a critical friend as a "trusted person

who asks provocative questions, provides data to be examined through another lens, and offers

critique of a person's work as a friend" (p. 50). Critical friendship allows practitioners to

challenge assumptions, confront realities, and identify new ways of thinking about pedagogy

(Baskerville & Goldblatt, 2009). As part of S-STEP research designs, critical friendship allows

for alternative interpretations of practice-based situations and a shared understanding of teacher education practice to be generated (Vanassche & Kelchtermans, 2015).

Although critical friendship has been widely used in S-STEP research designs, there has been little explication or critique of the nature of the critical friendship process itself. Many examples show how critical friendship was used to help a researcher consider practice from different angles or offer alternative interpretations; yet consideration of the intra- and inter-personal situations, dilemmas, or challenges that occurred in enacting critical friendship is a relatively recent undertaking in S-STEP research. For example, Nilsson (2013) and Peeters and Robinson (2015) both showed the difficulty in balancing supportive feedback that is at the same time critical, identifying how easy it can be to shift too far to one side and the problems that can arise as a result. Like Schuck and Russell (2005), Nilsson (2013) recommends that people entering a critical friendship tread cautiously and consider the respective participants' knowledge of the pedagogical/professional situation at hand and their openness to learn, while also reflecting on their trustworthiness, honesty, and sensitivity.

Many critical friendships involve one critical friend being involved to offset personal bias or self-justification from the teacher educator whose practice is being examined (Loughran, 2007). However, there may be something gained by involving a second layer of critical friendship, which is a key feature of this research design, where an "external" critical friend can provide supportive and challenging feedback to those involved in the first layer. In this paper we explore the ways in which these two distinct layers of critical friendship supported a pedagogical innovation in two physical education teacher education courses. The innovation, called *Learning About Meaningful Physical Education* (or LAMPE), focuses on pedagogies teacher educators use to teach future teachers to foster personally meaningful experiences for young people in physical

education.

A Rationale for the Innovation: Fostering Meaningful Experiences in Physical Education

Compelling arguments have been made as to why physical education teachers should provide students with personally meaningful experiences (Brown, 2012; Kretchmar, 2000; 2005; McCaughtry & Rovegno, 2001). There is a long and sustained history of arguments made that pay attention to the inherent value of movement as a site of meaning-making to enrich human existence (Bulger & Housner, 2009; Hawkins, 2008; McCaughtry & Rovegno, 2001; Metheny, 1968; Rintala, 2009). We chose to emphasize meaningful experiences due to several concerns with current forms of physical education. One primary concern is that many students find the dominant form of physical education – referred to as the multi-activity curriculum – lacking in personal meaning and relevance to their lives (Ennis, 2013; Kirk, 2010). The multi-activity curriculum may lack a long-lasting effect for students partly because physical educators take on too many objectives in a short period of time. A constant turnover of objectives often results in learners receiving mixed messages about the place of physical activity in their lives (Bulger & Housner, 2009; Kretchmar, 2008). In addition, the current emphasis on health-based outcomes (as distinct from education-related outcomes) has caused concerns that physical education has lost sight of the ways meaning and joy are derived from participation in physical activity. This is particularly problematic given that intrinsic motivational factors – for example, pleasure, satisfaction, challenge, and the social and emotional rewards that come from engaging with these types of experiences – are more likely to facilitate commitment to physical activity than are extrinsic factors (such as disease reduction or weight management) (Ryan et al., 1997; Teixeira, et al., 2012). To this end, focusing on personally meaningful experiences in physical education carries the potential to facilitate a stronger commitment to lifelong physical activity participation.

Ways to teach teachers how to foster personally meaningful learning in school physical education classes, however, are largely left to speculation. Our research is thus focused upon the development of pedagogies of physical education teacher education that help future teachers learn how to foster meaningful experiences for school-aged learners.

Enacting the LAMPE Innovation

Tim[1] teaches in an undergraduate physical education program at Brock University in Canada and Déirdre teaches in an elementary teacher education program at Mary Immaculate College in Ireland. Both were directly involved in planning and teaching using the LAMPE innovation and it is their experiences and pedagogies that provide the main sources of data collected in this study. The courses that provide the context for this study were *Developmental Games* (taught by Tim to prospective specialist physical education teachers) and *Introduction to Teaching Physical Education* (taught by Déirdre to prospective primary generalist teachers).

Kretchmar (2006) suggested that physical education teachers should offer experiences that promote social interaction, challenge, motor competence, fun, and delight. In one of their roles as as "activity brokers" (Kretchmar, 2000, p. 24), teachers and teacher educators should foster participants' "personal playgrounds" (Blankenship & Ayers, 2010, p. 176), providing opportunities for deep play in learning environments conducive to exploration and experimentation. Teacher educators thus provide prospective teachers with an understanding of ways to provide young people with opportunities for meaningful experiences through sequential planning of "just-right" activities (not too easy, not too hard and possessing the lure and challenge of success) that promote participation in activity playgrounds with others. The

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[1] Regarding voice, we use first person plural (i.e., we, our) when referring to all three authors and third person singular (i.e., Déirdre, Tim, Mary) when referring to individual participants in the research.

following example illustrates how we used three of the five criteria (in italics) to guide our teacher education practice. Based on observations of our students' engagement and in discussing their experience of a task, we might ask how they could modify the activity to make it *more or less challenging* based on their needs. We might suggest using a different body part or piece of equipment or changing the size of the playing space to develop *motor competence,* or we ask them to consider the merits of completing the task alone or through *interacting* with others.

What separates the LAMPE innovation from general good practice is that the fostering of meaningful experiences was positioned as the *prioritized filter* for the pedagogical decisions we made in our teacher education practices. For example, we prioritized learning with others in small groups and offered opportunities to involve students in decision-making about their learning to make experiences "just right" and fun. Such an intentional approach requires identification of specific pedagogical approaches to support meaningful experiences and evidence to confirm their effectiveness. Currently, there is a lack of empirical evidence on how to support pre-service teachers' learning about and through pedagogies that facilitate meaningful experiences; this research aims to provide insights into the processes we engaged in to address this gap.

We used two layers of critical friendship to examine and interrogate our enactment of LAMPE. The first layer of critical friendship involved Tim and Déirdre supporting and critiquing each other's practices in the LAMPE innovation. Mary is a Professor of physical education at University of Limerick in Ireland and had previous experiences developing innovations in physical education teacher education (*cf*. Collier & O'Sullivan, 1997; Kinchin & O'Sullivan, 2003; Tsangaridou & O'Sullivan, 1994; Wallhead & O'Sullivan, 2005). These experiences allowed her to act as an "external" critical friend who could critique and support Tim and

Déirdre's enactment of LAMPE pedagogies and their engagement in the S-STEP process. Mary's involvement thus provided the second layer of critical friendship. Mary's role could be described as a "meta-critical friend" (R. Clift, Personal Communication, Apr. 17, 2015) or as the meta-level component of a "dual dimension" to critical friendship in a self-study (Loughran & Brubaker, 2015, p. 259). We have used the term "meta-critical friend" since hearing Renee Clift suggest it in her discussant's response to our paper presentation at the *American Educational Research Association* conference, as we felt it effectively represented Mary's position and her role in this research project.

Schuck and Russell's (2005) suggestions for the processes of critical friendship were used given the originality of the LAMPE innovation and to allow us develop deeper understandings of ourselves. However, we extended their suggestions by involving Mary as an expert adviser, who could challenge and support the critical friendship process engaged in by Déirdre and Tim. Specifically, we would: document and share our experiences as we planned and enacted LAMPE pedagogies; be honest about the difficulties, uncertainties, contradictions, and doubts we faced throughout the process, and; provide opportunities to question and/or support one another's pedagogical decisions and actions. While there is considerable research that documents the *outcomes* of pedagogical innovations in physical education teacher education, (*cf.* Cohen & Zach, 2013; Curtner-Smith, 2007; Gurvitch, Blankenship, Metzler, & Lund, 2008) there is little that describes the *processes* of innovation. Thus our intention is to document the processes of engaging in the LAMPE innovation, of using S-STEP methodology, and of our novel two-layered approach to critical friendship. Our inquiry was guided by the following question:

- How does a layered approach to critical friendship help support a pedagogical innovation in pre-service teacher education?

S-STEP provided a way for us to develop and experiment with pedagogies that support pre-service teachers' learning of how to teach physical education in ways that are built on their understandings of meaningful experiences. Through sharing the findings with the teacher education community, we hope to generate discussion and debate in order to further develop the innovation beyond ourselves and our respective programs. Thus, we intentionally positioned our teacher education programs and practices as sites for inquiry (Loughran, 2013), and used S-STEP as a central platform to generate further chains of inquiry in relation to a broader program of research (i.e., to support learning how to foster meaningful experiences in physical education) (Zeichner, 2007). Importantly, a significant contribution of this research to the literature lies in the articulation of a layered approach to critical friendship to maintain a focus on our selves-in-practice, while simultaneously building evidence to make claims based on shared understandings of practice.

Methodology

S-STEP research provides the tools to inquire systematically into the complex nature of teacher education practice (Loughran, 2006). We anticipated that our experiences implementing LAMPE would capture our dilemmas, frustrations, and moments of success – the very stuff that S-STEP researchers seek to share and understand in order to improve and extend knowledge of teaching teachers (Samaras & Freese, 2006). Our overarching inquiry was guided by LaBoskey's (2004) criteria for quality in S-STEP research design: (a) self-initiated and -focused, (b) improvement-aimed, (c) interactive, (d) multiple forms of qualitative data, and (e) validity based in trustworthiness. While LaBoskey's (2004) criteria provided a useful frame for our research

design, it did not offer sufficient guidance on the conditions, processes, and nature of critical friendship, particularly when more than two people are involved. Therefore, we positioned her third criterion, interactivity, as central to our research question. In particular we aimed to provide new insight on a layered approach to critical friendship and the roles involved within each layer, and thus extend the ways in which the criterion of interactivity is conceptualized and operationalized in S-STEP research design.

Context

An important contextual feature of this research is our personal and professional relationships with one another. Déirdre and Mary have worked together for several years. Mary acted as advisor to Déirdre on the development and implementation of a number of research projects resulting in co-authored research articles. Mary has also acted as a supportive mentor to Déirdre on her teacher education practices and professional development. Prior to this project, Tim and Déirdre had not worked together, nor had Tim and Mary. Indeed, prior to this project, Tim and Déirdre had not even spoken to one another other than in several brief emails. The impetus for this research came from shared interests in physical education teacher education and S-STEP. Tim and Déirdre were working separately on research concerning primary classroom teachers and physical education and had read one another's work. Both contributed to a special journal issue on international perspectives on physical education, which was edited by Mary. Déirdre's publication of a collaborative S-STEP with colleagues (Ní Chróinín, Mitchell, Kenny, Murtagh, & Vaughan, 2013) served as a catalyst for this shared research agenda.

Tim had conducted several self-studies and the overlap between our research interests provided an opportunity to collaborate and learn with and from each other. We brainstormed some ideas and saw potential in examining the enactment of a joy-orientation in physical

education teacher education (Blankenship & Ayers, 2010), which, as the research progressed, evolved into an emphasis on personally meaningful physical education. We aimed to gather practice-based data and generate evidence of the development of pedagogies that supported the theoretical ideas we had read about.

Our limited interactions with one another prior to the research is significant, because, particularly in the first year of the project, we were getting to know one another personally and professionally as we completed the first phase of the research. Importantly, this had implications for the S-STEP design, because deep understanding of self and practice occurs best when there is an openness, honesty, and the participants involved in the inquiry trust one another (LaBoskey, 2004). These qualities had to be established in tandem with the development of LAMPE pedagogies. The future of the critical friendship process and of the innovation itself therefore rested on the assumption that we could and would like, respect, trust, and support one another and all benefit from the experience.

Data Sources

We drew from two primary sources of qualitative data gathered over two years to address the research question:

1. *Reflective journal entries and emails*. Tim and Déirdre made journal entries before and after each class they taught using LAMPE pedagogies for a total of 33 entries. In the first year of the project, we used a reflection template which, along with the outline for each lesson plan and space for open-ended reflection, asked the following questions:

- How were my assumptions challenged?

- How was I able to make my knowledge of teaching physical education (particularly with a joy/meaning orientation) explicit to students? What challenges did I face in articulating the reasons behind my teaching decisions and actions?

- How/when was I made to feel vulnerable during the lesson? How did I handle this?

- What moments were particularly joyful/meaningful to me?

- What insights and understanding about teaching and learning did I gain?

We used a structured reflection template for several reasons. First, S-STEP research requires a specific focus for the inquiry from the outset. We felt that structured questions would allow us to maintain a clear focus on the challenges and issues guiding our research. Second, because Tim and Déirdre had not worked together prior to this research, we felt that a structured template would help us provide focused direction for the responses. Upon consideration, we now see how the reflection template acted as an implicit guide for shaping the nature of the critical friendship itself.

In the study's first phase (one academic term from September-December, 2013), Déirdre documented her planning and reflections on the enactment of LAMPE pedagogies in the *Introduction to Teaching Physical Education* course for pre-service primary teachers. Each week she shared her reflections with Tim who responded with questions, requests for clarification, links to theoretical ideas or other research, or thoughts related to his own experiences. Déirdre would then reply to Tim's questions and responses. At the end of the term we both wrote culminating reflections highlighting salient experiences from our respective roles as teacher educator-innovator or critical friend. The culminating reflections were shared with Mary who responded with further questions, probes, and comments. In the second phase of the study (the

academic term from January-April, 2014), Tim and Déirdre switched roles and the process was repeated.

In the second year of the study we used the same process (Déirdre's teaching was the focus of our inquiry from September-December, 2014 and Tim's from January-April, 2015). Upon Mary's urging to take our critical friendship beyond the convivial nature evident in the first year, to challenge our understanding of LAMPE pedagogies in greater depth, and in becoming more comfortable with each other's style of reflection, we changed the structure of the reflection template. Specifically, we provided a brief overview of the lesson plan but chose to focus on a critical incident from each class that led us to question LAMPE pedagogies, either in a general sense or in relation to our own enactment. The person writing the reflection was required to provide a contextual description of the incident and explain how their thoughts about the incident had changed due to reflection. The critical friend then responded using the following unfinished sentences as guidelines:

- What resonated with my thinking was…
- The questions that it raised for me are…
- If I was going to be contentious, I might suggest…

We also kept record of email correspondence to one another when LAMPE pedagogies or our practice was referenced.

2. *Recorded conversations.* Using digital audio recorders, Tim and Déirdre recorded conversations in each academic term using Skype™ (for a total of six conversations). These conversations were guided by the reflective journal entries and emails; however, they often went in new and unexpected directions. In addition, all three authors spoke three times: once face-to-

face and twice using Skype™. Topics of discussion included issues that stood out from the culminating reflections and from our experiences of enacting LAMPE pedagogies, and issues related to planning and design of the LAMPE project.

Analysis

Because the research question focused upon our critical friendship, the analysis was directed toward the *processes* of the S-STEP design – the role that our approach to critical friendship played in advancing our understanding of the innovation and of our respective selves-in-practice. Specifically, data were analyzed using "turning points". Bullock and Ritter (2011) identified the following characteristics of turning points: there is an affective element to the data; the data frame a problem of practice; the author of the data implicitly or explicitly asks for help from a critical friend; and the data allows time to take action on the problem. Briefly, turning points are moments when the researchers come to new understandings of the processes of teaching teachers as the result of engaging in a collaborative S-STEP (Bullock & Ritter, 2011).

The text from all data sources was coded independently using inductive coding, although we kept the criteria for turning points in mind. Following independent coding and analysis, Tim and Déirdre discussed their results, and arrived at mutually agreed upon turning points. The identified turning points were then shared with Mary who sought clarification or urged us to return to the data to consider things in more depth. In the final stage of analysis, we identified themes present across 24 turning points developed by Déirdre and Tim over the 2-year period. The themes presented below relate to salient aspects of our critical friendship. Themes related specifically to LAMPE pedagogies are outlined elsewhere (Fletcher, Ní Chróinín, O'Sullivan, & Price, 2016; Ní Chróinín, Fletcher, & O'Sullivan, 2015).

We sought to establish trustworthiness in several ways. The main basis on which we claim trustworthiness is through the use of multiple data sources generated by different participants (Tim, Déirdre, and Mary, non-participant peer observers). The different perspectives allowed data to be crystallized and alternative interpretations of practice to be considered, particularly through the sharing of turning points with Mary. As with most S-STEP research designs, however, we leave it to readers to consider the extent to which the interpretations of the shared data ring true with their own contextually-bound experiences and understandings of innovations in teacher education practice.

Results

Much of the design for our collaborative S-STEP research was guided by an assumption that new understandings of self and practice come from engaging in interactive processes with others (LaBoskey, 2004). We assumed the critical friendship process would help us develop insights and understandings of LAMPE pedagogies. Our analysis showed that while our understanding and development of LAMPE pedagogies evolved over the course of the two year project, so too did our understanding and enactment of critical friendship. Although our intent at the outset of the project was to provide many opportunities for interaction – an aim supported by the literature (e.g., Schuck & Russell, 2005) – our analysis shows we had not engaged with this aim in a critical way. That is, in designing the project, we had not shared with one another what we expected of the critical friendship, either in terms of its process or outcomes. In the following sections we discuss two themes related to the evolution of our critical friendship: (a) critical friendship as a risky business and (b) the role of critical friendship in advancing the LAMPE innovation. We describe the ways in which our critical friendship changed and developed over

the course of the two years, as well as the ways in which the shifts in our critical friendship led to new understandings of the innovation.

Critical Friendship as a Risky Business

Despite Tim not knowing Déirdre or Mary personally prior to the research, our research design demonstrated an implicit assumption that our critical friendship would be smooth, easy, and relatively unproblematic. A turning point was the realization of the risks we took in uncritically engaging in critical friendship – a realization that did not come until the end of the first year of the project.

Although our research was designed and implemented methodically, our critical friendship evolved organically. That is, prior to enacting our roles as givers or receivers of critical friendship we did not share our thoughts about what "good" critical friends do or what we each wanted from the process. Upon reflection and analysis of the interactions that occurred during the first year of the study, we tacitly understood our responsibility to be sensitive to one another's needs, emotions, and the pedagogical situations we were involved in. However, this understanding occurred more by chance than by design. We now interpret those data as revealing Tim's and Déirdre's cautious approach to providing feedback on each other's practice, where we couched criticism carefully for fear of causing offense. There were many incidents where we challenged and questioned each other and had we known each other better initially, we would likely have been more challenging while also being supportive of difference. Yet, in being overly sensitive to one another's feelings and emotions we risked not receiving enough critical support from one another through moments of frustration or uncertainty. Even though it did not eventuate, there was a fear that being overly challenging risked causing the project to stagnate. This gentle wading into the critical friendship indicates we did not want to let our personalities

impede the innovation or the nature of the collaboration. To draw from Goffman (1959), we were mindful of presenting some parts of ourselves while keeping other parts hidden as we got a sense of one another and a sense of our respective selves in the interactions that were occurring.

At the outset of the project, it was clear that our critical friendship was more focused toward the friendship part of the concept rather than the criticality. There were difficulties for both Déirdre and Tim in making themselves vulnerable to each other through sharing challenges in their practices and insights related to LAMPE. For example, in Déirdre's response to a moment she felt vulnerable during the first week of classes, she said that sharing experiences of her own physical activity participation with students led her to feel somewhat vulnerable. Tim asked what was it about sharing those experiences that caused the vulnerability, to which Déirdre replied:

> Tim, honestly, of all the questions on the template this is the one I find most difficult… I think the word "vulnerable" makes me feel funny inside and I do not share this with the students much… though I think I feel quite vulnerable about the whole [meaning-making] approach at present because it is new and unknown.

Because we had not discussed issues of trust and respect with each other personally or professionally prior to engaging in the project, it makes sense there would be some discomfort exposing shortcomings or areas of weakness, particularly when professional opinions were wrapped up in these very personal moments. On another level, however, Déirdre's acknowledgement of the difficulty of sharing her vulnerability to Tim was in itself a moment of vulnerability.

The time we took to settle into the friendship part of the critical friendship, though unplanned, did pay off as the study progressed. In one email Déirdre described the systematic

inquiry process we had designed and subsequent conversations as "cathartic", while Tim felt pushed to articulate his own understanding (and the gaps in his understanding) of LAMPE pedagogies and his own teacher education practice more generally. For example, at the end of the first year of the study, Déirdre challenged Tim to articulate his priorities for the outcomes of the innovation, which he found difficult to do and, as a result, struggled to respond to the question and appeared to let Déirdre's challenge go unmet. The importance of the second layer of critical friendship became apparent in this example because Mary made note of this in a conversation and encouraged Tim to respond to Déirdre's question. Such urging led Tim to more clearly articulate his beliefs for teaching teachers using LAMPE pedagogies. This example and others revealed how Tim and Déirdre were increasingly able to turn to each other and be open and honest. It also challenged us to think more deeply about our teacher education practice and offer reassurance that taking on LAMPE pedagogies in physical education teacher education was worth doing.

Mary's role in the early stages of the critical friendship process could be viewed as more holistic than Tim's and Déirdre's in that she embraced both criticality and friendship as necessary parts of the professional relationship. Her experience in developing pedagogical innovations over several decades, along with her detachment from the day-to-day realities of enacting LAMPE pedagogies allowed her to take a broader view of the progress of the innovation and highlight gaps or promising avenues for further exploration. For example, at the end of the first year of the project, the three of us discussed plans for the following year's design. Tim suggested that things should progress relatively unchanged from the first year, saying: "The turning point about the importance of critical friendship… doesn't seem to have a lot of implications for [Year] 2 other than we continue the process of being critical friends, realizing

how important that was for each of us". Mary immediately responded, asking: "Could I challenge that?" Using ideas from Fullan (1993), she encouraged Déirdre and Tim to "see our problems as friends" and to "move beyond the niceties". She continued: "I'm wondering [if you] might reflect on whether or not you have really challenged each other in as strong enough a way that really pushes […] your assumptions about pedagogy, or your assumptions particularly about what it means to have a meaning-making approach to PE". In short, Mary "questioned [Tim's claim] about whether or not [the structure of the critical friendship] would have implications for the next year of the project".

Based on Mary's suggestion, we changed the reflection template to provide space for the critical friend to be contentious in responding to the other's practice, while still being caring and supportive. While Mary took a risk in exposing an aspect of the data collection strategy that warranted closer scrutiny, the critical turn that our critical friendship took as a result of modifying the reflection template represented a turning point for the research. Mary's role as meta-critical friend significantly helped to advance the progress of the innovation and our understanding of LAMPE pedagogies.

The impetus for Déirdre and Tim to constructively challenge each other in the second year of the project worked in several ways. First, it provided a new level of emotional involvement for all involved. For instance, following the first few weeks of using the changed template, Déirdre sent the following email to Tim that contained her general reaction to the new interactions:

Tim, this is really fun and challenging: In completing this template I am finding:

1. Reading your responses and then sitting with them for a few days before responding

2. Myself dipping into literature and thinking broadly across PETE/PE research.

This week alone I have read about signature pedagogies, instructional-based

models, pedagogical cases and PETE as well as "Building a sense of community".

I am finding that the direction of our inquiry is providing a frame for me to make

connections with and critically consider the i*First*[2] literature arriving in my e-

mailbox.

3. Smiling, and asking more questions. I think the structure of the

reflection/questions has allowed us to consider possibilities/opportunities and

opened up potential to imagine and hypothesise without having the answer…

Thanks, Déirdre

In one reflection Déirdre also noted the ways the contentious comments led to a

heightened awareness of her embodied emotional response to the S-STEP process. In one

week when Tim's critical friend comments were mostly positive, she noted how the

absence of contention left her feeling flat:

The contentious comments this week were not specifically related to my decisions

around my practice. I did not experience the same "emotional" response this

week. The contrast allowed me to notice that I was not reacting in the same way.

Missing was the tensing up of my muscles, sitting upright in my chair leaning

towards the keyboard, tension in my body, ideas racing through my head, talking

through the arguments pro and con with Tim in my head that I have experienced

other weeks. I think this absence was because I did not see these comments as

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[2] i*First* is a system hosted by publisher Taylor and Francis, where journal articles become available online shortly after author proofs have been corrected. Subscribers can receive email updates about newly published articles through i*First* (Taylor and Francis, n.d.).

"personal" to me, I did not find myself therefore as invested in defending a stance or articulating a rationale or having to consider that I was off track or not aligning with high pedagogical standards and expectations. Sharing my practices always includes the possibility that I am doing something wrong/that I have missed or misinterpreted some major pedagogical strategy/approach. Sharing is risky, even with Tim who is amazingly diplomatic in his critical friend responses. This week Tim left me on safe, comfortable ground. This leaves me wondering whether I engaged fully with the intent of his comments…

What is of interest from this response is the ways in which the *absence* of contention led Déirdre to question her practice, or at least her articulation of practice. Moreover, Tim also felt pressured to be contentious even when he agreed with Déirdre's pedagogical decisions or actions. In some ways Tim and Déirdre appeared to interpret the contentious comments as an obligation (that it must be done) rather than a possibility (that it can be done when appropriate and relevant).

The expectation of contention from Déirdre as critical friend also seemed to affect how Tim approached his own reflections. In one journal entry he wrote: "I should have been more responsive to the issues and problems this situation raised". He became more critical of himself, resulting in Déirdre becoming more affirmative than contentious in some instances. For example, she responded to one of Tim's reflections: "… I think you are being exceptionally hard on yourself", and "it is not easy to design and deliver [lessons] that illustrate meaning-making in action and here Tim designed and delivered a super example". It is possible that Tim 's experience as a contentious critical friend the previous semester prompted him to continue being critical (of himself) and anticipate and pre-empt areas of contention. These examples highlight

the importance of finding a balance between acknowledging what we do well and critically engaging in ways that progress the innovation.

Overall, taking risks by making oneself vulnerable through exposure to the possibility of a provocative comment had a positive effect on the vibrancy of the self-study and our personal involvement in it. The inclusion of an opportunity to offer contentious comments thus led all of us to consider the entire process associated with the innovation more deliberately and deeply. A result was therefore a deeper and more sophisticated interpretation of LAMPE pedagogies.

The Role of a Layered Approach to Critical Friendship in Advancing the Pedagogical Innovation

Although, with hindsight, we were able to see some shortcomings in how we approached the critical friendship process in the first year of the project, there were certainly several advances we achieved as a result of collaborative S-STEP. Our analysis showed we implicitly assumed personalized roles in the project based on tacit strengths. For example, Déirdre had a stronger understanding of the principles and nuances of the philosophies underpinning meaningful experiences in physical education, while Tim's strength lay in enacting and articulating teacher education pedagogies. Déirdre learned about critical friendship and teacher education pedagogies from Tim in the first year of the research, citing how helpful his questioning had been in getting her to focus upon the reasons for her pedagogical actions in support of LAMPE. This carried over to when we switched roles as teacher educators and critical friends (that is, when Déirdre became Tim's critical friend), as Déirdre gained insights into teacher education pedagogies through reading Tim's articulations of his practice. In turn, she integrated some of these pedagogies into her enactment of LAMPE in the second year of the research.

Déirdre's questions about LAMPE pedagogies specifically and teacher education pedagogies more broadly based on her critique of Tim's practice pushed him to better articulate his thoughts and beliefs about teaching. These interactions represent how our practices developed and LAMPE pedagogies became crystallized: each question and response generated an opportunity to explore issues in teaching teachers about fostering meaningful experiences in physical education. It also offered us new ways to look at problems of teaching and learning. Déirdre's role as critical friend was similar to that of an excavator, seeking to unearth the underlying beliefs, reasons, and understandings that were informing how we implemented ideas about LAMPE.

Again, as a result of Mary's encouragement to move "beyond the niceties", in the second year of the project we became more convinced of the powerful role our critical friendship played in fostering deeper understanding of our practice as teacher educators and the potential of the LAMPE innovation for others who teach teachers about physical education. For example, Déirdre reflected:

> Developing a new approach can sometimes be confusing and I definitely had a "house of cards" moment when I wrote this last week. Tim's response is grounding and reassuring. I feel comfortable that [we] are on the same page. Through tossing out and interrogating ideas we are all the time extending our understanding and puzzling out answers around what we think and understand about meaning-making… I think the whole picture is still slightly blurred but parts of the image are becoming clearer.

Similarly, Déirdre's pushing of Tim to explain the inclusion of a pencil-and-paper test in the course evaluation and its alignment to LAMPE pedagogies caused him to acknowledge how easy it was to overlook certain aspects of his practice through the course design. He said:

> Your point about [the test] relating to LAMPE is a good one... I never thought to question its inclusion based on LAMPE… I don't think it has much relation to an assessment of students' meaning-making at all. To be honest, most of my assessment criteria in this course are assessments of knowledge, understanding, and application of games and game principles rather than of their meaning-making (other than a reflection on a peer teaching lesson). This comment has really forced me to rethink the assessment criteria I have in place currently to capture some of the more critical elements of the LAMPE we have thought about up till now….

To add to the probes Tim and Déirdre were providing to each other, Mary advanced the collective thinking about the innovation even further by asking questions about elements of the philosophies somewhat ignored by Tim and Déirdre.

Tim and Déirdre felt that their understanding and development of the LAMPE innovation progressed as a result of a more "challenging" approach to critical friendship, and so too did Mary. In a recorded discussion based on our analysis of Year 2 data, Mary began the conversation by stating:

> My overall impression at the moment is that the difference between your discussions now and the last time we engaged in a conversation like this is just…there's just no comparison. I mean, the depth of the conversation, the quality of the questioning, and the kinds of areas that you're beginning to push

each other I think is quite significantly different. I don't know if you feel that but

I certainly got that from the documents.

This comment shows that, in addition to Mary's willingness to be critical and, arguably, contentious in responding to Tim and Déirdre's actions throughout the project, so too was she supportive and caring. This positive encouragement for Tim and Déirdre impacted them on personal and professional levels, enabling them to see how LAMPE pedagogies had potential application beyond their immediate teaching practice and could thus influence how teacher education practice might be advanced in physical education more broadly. Specifically, Mary's encouragement provided Tim and Déirdre with the confidence that, when shared, the insights developed through S-STEP could be taken and used by others to enact pedagogies geared toward meaningful experiences in physical education in their own teacher education programs. This has led our team to focus on articulating specific details about LAMPE pedagogies in forthcoming publications for adaptation, use, and critique by others (*cf.* Fletcher, et al., 2016; Ní Chróinín, et al., 2015).

Discussion

Our research provides further evidence of the crucial role that interactivity (in our case, interacting with critical friends) plays in deepening understandings of teacher education practice, supporting claims by others about its role as an indicator of quality in S-STEP design (LaBoskey, 2004; Petrarca & Bullock, 2014; Pinnegar & Hamilton, 2009; Schuck & Russell, 2005). Moreover, the findings extend out understandings of critical friendships by illustrating how growth in our roles as critical friends was essential to progressing a pedagogical innovation in pre-service teacher education. Our contribution to the S-STEP literature is in demonstrating the

value of a layered approach to critical friendship in developing understandings of teacher education practice.

The results of our research support the value and, indeed, the necessity of acknowledging both the critical and the friendship in "critical friendship". The newness of our relationships at the outset of the project meant it was necessary first to focus on the friendship part of the relationship. As the teacher educators, this allowed Tom and Jenny to establish trust with each other so we could be open and honest and thus expose their vulnerabilities, both personal and professional. We build on findings elsewhere (Hamilton & Pinnegar, 2000) of the importance of vulnerability, grounded in an openness to interrogate and make judgments of ourselves and our practices, and to then share these reflections with colleagues in developing and understanding our teacher education practices. The safe space we created to acknowledge uncertainty without fear of judgment helped to build shared understandings of the LAMPE innovation.

It is interesting to consider that the trajectory of our relationship may have maintained a friendship focus had it not been for Mary's urging for us to go "beyond the niceties". This push led us to engage in richer and deeper conversations about our understanding and enactment of LAMPE pedagogies, and therefore gain further insights into our practices. We started asking more challenging questions about the innovation *and* about each other's practice. The emphasis on the "critical" helped the research to progress in tandem with our personal and professional relationship. Terms related to friendship, such as "supportive", "encouraging", and "compassionate", were emphasized in year one. In the second year we added to this list "contentious", "challenging", and "controversial". This is not to suggest that the former list is negated, but rather it is built upon as participants in the critical friendship process gain more trust in one another in the context of their work. Our interactions in the first year of the project, while

valuable and appropriate for the exploratory phase of the innovation, may have hampered development of the innovation in year two if we had continued in the same way. The contentious element introduced in year two aligned well with the refinement of the innovation, but would not have been appropriate in year one. We caution against an overzealous approach to criticality and avoid an expectation that contention and critique is required in all critical friend interactions. A balanced approach which acknowledges positive aspects while providing a challenging critique as appropriate is recommended.

We highlight the importance of establishing ground rules and expectations in critical friendships, allowing time and space for friendships and trust to develop and increasing criticality as confidence in the innovation and each other is developed. This extends the work of Schuck and Russell (2005) in demonstrating how the processes of critical friendship might sometimes be taken up with little consideration of the potential problems inherent in such relationships (e.g., invoking discomfort through critiquing beliefs and practices, unwillingness to be honest in sharing problems). We were fortunate that our critical friendship worked in ways that supported *and* grew our understanding and enactment of the LAMPE innovation, however, our inattentiveness to the potential negative outcomes of critical friendship leads us to recommend that others who engage in critical friendship do so with a plan and/or list of what each of the contributors wants or hopes to get out of the relationship. The use of reflection templates, which the critical friend could respond to, provided a useful space for the challenging and contentious element of our critical friendship to grow. We found that using specific prompts helped Tim and Déirdre manage their exchanges in rigorous but respectful ways that enabled the research question to be addressed, while also attending to potential emotional sensitivities.

Indeed, the use of prompts through reflection templates enabled trust to be established as the research progressed.

Mary provided impetus at the end of year one that helped us add value to the critical friendship in ways that supported development of the innovation. The inclusion of an external advisor in the design of S-STEP research merits further consideration, particularly during key moments in innovation development. When an external advisor is not possible, S-STEP researchers can plan for built-in reviews at key points in the research that focus on how the critical friendship can best support the research process. As illustrated in our analysis, Mary's role as "meta-critical friend" helped Déirdre and Tim navigate their critical friendship and move beyond what Argyris (1976) described as single-loop learning – where responses to issues of practice were tentative and couched in qualified language to avoid offense – and into the realm of double-loop learning, where ideas about practice were critiqued in more rigorous fashion that resulted in reframing of our practices (Loughran & Brubaker, 2015; Russell & Bullock, 2014). The layered nature of critical friendship in this research also enhanced the research process in a number of other ways. For example, Mary provided an alternative perspective on innovation development, offering a fresh perspective on developments within the innovation as she was not engaged in the everyday implementation of LAMPE pedagogies. This allowed her to disrupt consensus between Tim on Déirdre by encouraging further interrogation of thoughts and practices.

Our critical friendship allowed for both the development of alternative interpretations and a shared understanding of teacher education practice (Vanassche & Kelchtermans, 2015). In particular, we argue that our critical friendship offered a powerful means to encourage innovative pedagogical practices, leading to improved learning about our respective selves-in-practice and

contribute to an innovation in physical education teacher education. We have demonstrated the importance of an evolving critical friend role to developing such innovation. Establishing a friendship based on shared trust and clear definition of roles and expectations provides a platform for exploration of an innovation. However, the critical element of the friendship must grow if the innovation is to grow and we believe our research offers an exemplar for ways in which this growth can be supported.

Also, we have provided evidence supporting how a layered approach to critical friendship can extend the nature and processes of what might be described as a traditional (or at least the most common) approach to critical friendship, involving two or more practitioners working "on the ground". Our research highlights the value of a "meta-critical friend" with expertise in the area, contributing both an expert voice as well as an alternative perspective. The importance of the "meta-critical friend" adopting both challenging and supportive roles is emphasized. In conclusion, the findings of our research indicate how critical friendship can be used as a powerful tool to support the development and enactment of pedagogical innovations in teacher education practice, while also enhancing the personal and professional development of the teacher educators engaged in those practices.

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